

# UNITED STATES PATENT OFFICE.

RICHARD J. PINTSCH, OF BERLIN, PRUSSIA.

## IMPROVEMENT IN TREATING LEATHER FOR GAS-REGULATOR DIAPHRAGMS.

Specification forming part of Letters Patent No. **162,947**, dated May 4, 1875; application filed April 2, 1875.

*To all whom it may concern:*

Be it known that I, RICHARD JULIUS PINTSCH, manufacturer and mechanical engineer, of Berlin, Prussia, in the German Empire, have invented certain Improvements in Air and Gas Tight Membranes for Regulators of Gas-Pressure, Dry Gasometers, and similar purposes, and in the process of their manufacture; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention consists in improvements in the manufacture of membranes for gas and other regulators, dry gas-meters, and similar purposes, whereby the same are rendered supple, firm, and perfectly gas and air tight, and not liable to be injuriously acted upon by the gases or substances contained therein.

Up to the present time leather has been the most fit stuff, if only it had been possible to prepare it in such a way as to show the above-mentioned qualities. I have succeeded in this by employing the following process: Sheep-skin of the best quality, which does not contain any fat, and is homogeneous as much as possible in all parts, is strongly impregnated on the inside with a solution of gutta-percha in bisulphuret of carbon, of the consistency of very concentrated glycerine, so that this solution from the inside permeates the skin perfectly, and the surplus of the solution is lightly wiped off.

Great care should be taken that the outside of the skin does not come into contact with this solution.

The medium of solution (the bisulphuret of carbon) evaporates very fast, and the gutta-percha remaining in the skin shuts the

pores perfectly up; but thus the skin becomes pretty hard and unfit. To make it soft and supple, it is placed in the best not oxidated oil, free of acid—for instance, almond-oil—after having fully evaporated the bisulphuret. It enters the skin now from outside, swells it still more up, shuts the pores still more, and makes it fully supple. The gutta-percha combines with the oil in the skin, and forms in it a substance that cannot be decomposed by gas or its compounds, which perfectly closes the pores of the leather, and preserves it from decomposition, and keeps it fresh and supple.

A skin prepared in such a way, and used in pressure gas-regulators, so that the gas is under a pressure of six to eight atmospheres, pressing against the inside, while the air is pressing on the outside, kept till now for five years unchanged without any sign of decomposition.

Having thus described the nature of my invention, and the manner in which it is to be performed, I claim as new—

The process for treating leather for diaphragms for gas-regulators, dry gas-meters, and similar purposes, by means of a dissolution of gutta-percha in bisulphuret of carbon applied upon the inside, and best not oxidated oil, free of acid, applied upon the outside, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

RICHARD JULIUS PINTSCH.

Witnesses:

ROBERT GOTTHEL,  
HERMANN SEIDEL.